

WHAT IS CLAIMED IS:

1. A chain tensioner provided with a tensioner arm rockably supported by fixed structure and slidably engaged with an outside on a loose side of a transmission chain without an end coupling a driving sprocket and a driven sprocket and a tensioner lifter supported by fixed structure for pressing the tensioner arm upon the side of the transmission chain, wherein:

a control arm rockably supported by a fixed structure for transmitting pressure from the tensioner lifter to the tensioner arm, said control arm being inserted between the tensioner arm and the tensioner lifter.

2. The chain tensioner according to claim 1, wherein a point of an application of the pressure of the tensioner lifter upon the control arm is set to substantial a middle of the center of the oscillation of the control arm and a point at which the control arm presses the tensioner arm.

3. The chain tensioner according to claim 1, wherein a pressing part slidably engaged with the outside of the transmission chain is provided to the control arm between the end of the tensioner arm and the sprocket in the vicinity of the end.

4. The chain tensioner according to claim 2, wherein a pressing part slidably engaged with the outside of the transmission chain is provided to the control arm between the end of the tensioner arm and the sprocket in the vicinity of the end.

5. The chain tensioner according to claim 1, wherein said control arm includes a proximal end and a distal end and said tensioner arm includes a proximal end and a distal end, said proximal end of said tensioner arm being pivotably mounted relative to said fixed structure and said proximal end of said control arm being pivotably mounted relative to said fixed structure at a point displaced relative to the pivotable mounting of said tensioner arm.

6. The chain tensioner according to claim 5, wherein said distal end of said control arm engages the tensioner arm at a point displaced a predetermined distance from the distal end of the tensioner arm towards the proximal end of the tensioner arm.

7. The chain tensioner according to claim 1, wherein said control arm includes a proximal end and a distal end, said proximal end of said control arm being pivotably mounted relative to said fixed structure, said distal end of said control arm being in engagement with said tensioner arm and an engaging portion of said control arm disposed between said proximal end and said distal end being operatively engaged with said tensioner lifter for applying a force to said tensioner arm.

8. The chain tensioner according to claim 7, and further including an auxiliary shoe mounted on said control arm and being in engagement with said transmission chain.

9. The chain tensioner according to claim 8, wherein said auxiliary shoe is constructed of a synthetic resin material.

10. The chain tensioner according to claim 7, and further including a pressure plate and a cushion material mounted on said engaging portion of said control arm for engagement with said tensioner lifter.

11. A tensioner comprising:

a tensioner arm;

a transmission member operatively coupled between a driving sprocket and a driven sprocket, said tensioner arm being in engagement with a loose side of said transmission member;

a tensioner lifter for pressing the tensioner arm into engagement with the loose side of the transmission member; and

a control arm movably mounted relative to said tensioner arm for transmitting pressure from the tensioner lifter to the tensioner arm, said control arm being inserted between the tensioner arm and the tensioner lifter.

12. The tensioner according to claim 11, wherein a point of an application of the pressure of the tensioner lifter upon the control arm is set to substantially a middle of the center of the oscillation of the control arm and a point at which the control arm presses the tensioner arm.

13. The tensioner according to claim 11, wherein a pressing part slidably engaged with the outside of the transmission member is provided to the control arm between the end of the tensioner arm and the sprocket in the vicinity of the end.

14. The tensioner according to claim 12, wherein a pressing part slidably engaged with the outside of the transmission member is provided to the control arm between the end of the tensioner arm and the sprocket in the vicinity of the end.

15. The tensioner according to claim 11, wherein said control arm includes a proximal end and a distal end and said tensioner arm includes a proximal end and a distal end, said proximal end of said tensioner arm being pivotably mounted relative to a fixed structure and said proximal end of said control arm being pivotably mounted relative to said fixed structure at a point displaced relative to the pivotable mounting of said tensioner arm.

16. The tensioner according to claim 15, wherein said distal end of said control arm engages the tensioner arm at a point displaced a predetermined distance from the distal end of the tensioner arm towards the proximal end of the tensioner arm.

17. The tensioner according to claim 11, wherein said control arm includes a proximal end and a distal end, said proximal end of said control arm being pivotably mounted relative to a fixed structure, said distal end of said control arm being in engagement with said tensioner arm and an engaging portion of said control arm disposed between said proximal end and said distal end being operatively engaged with said tensioner lifter for applying a force to said tensioner arm.

18. The tensioner according to claim 17, and further including an auxiliary shoe mounted on said control arm and being in engagement with said transmission member.

19. The tensioner according to claim 18, wherein said auxiliary shoe is constructed of a synthetic resin material.

20. The tensioner according to claim 17, and further including a pressure plate and a cushion material mounted on said engaging portion of said control arm for engagement with said tensioner lifter.